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Docket No.: E-41365

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MAIL STOP: APPEAL BRIEF-PATENTSBy: Date: March 5, 2007IN THE UNITED STATES PATENT AND TRADEMARK OFFICEBefore the Board of Patent Appeals and Interferences

Applic. No. : 09/998,724 Confirmation No.: 7179
Inventor : Rolf Brück
Filed : November 30, 2001
Title : Ceramic Honeycomb Body with Intercalation and
Method for Producing the Same
TC/A.U. : 1764
Examiner : Thanh P. Duong
Customer No. : 24131

Hon. Commissioner for Patents
Alexandria, VA 22313-1450

BRIEF ON APPEAL

S i r :

This is an appeal from the final rejection in the Office action dated August 31, 2006, finally rejecting claims 5-7, 11, 13-14, 16-20, 25 and 27-28.

It is noted that the Office Action Summary in the Final Office action incorrectly recites the claims which are

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rejected (when compared to the rejections in items 1-3 in the remainder of the Office action) and fails to mention withdrawn claims 1-4. It is also noted that items 1-3 do not present a rejection of claim 26, although that claims is also not mentioned as being allowable.

Appellant submits this *Brief on Appeal*, including payment in the amount of \$500.00 to cover the fee for filing the *Brief on Appeal*.

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Real Party in Interest:

This application is assigned to Emitec Gesellschaft für Emissionstechnologie mbH of Lohmar, Germany. The assignment will be submitted for recordation upon the termination of this appeal.

Related Appeals and Interferences:

No related appeals or interference proceedings are currently pending which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

Status of Claims:

Claims 5-7, 14 and 17-20 are rejected and are under appeal. Claims 8-13, 15-16, 21-25 and 27-28 have been cancelled. Claims 1-4 are withdrawn from consideration. Claim 26 was intended to be canceled and is not the subject of this appeal.

Status of Amendments:

No claims were amended after the final Office action, although several claims were canceled, in an Amendment under 37 CFR § 1.116 filed on November 21, 2006. The Primary Examiner stated in an Advisory Action dated January 8, 2007 that the request for reconsideration had been considered but

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did not place the application in condition for allowance.

The Amendment was entered.

Summary of the Claimed Subject Matter:

According to 37 CFR § 41.37(c)(1)(v) *Summary of Claimed Subject Matter*, only the subject matter defined in each of the appealed independent claims is to be explained by page and line number of the Specification. The only independent claim under appeal is claim 5.

Regarding the dependent claims, it is only means plus function clauses which need to be explained. There are no means plus function clauses in the appealed claims.

In the following concise explanation, the wording of claim 5 is bolded and the concise explanation is indented.

Independent claim 5 reads as follows: **A honeycomb body, comprising:**

the honeycomb body as a whole is identified by reference numeral 4 in Fig. 1 and described between lines 6 and 25 on page 13 and elements of the honeycomb body is mentioned on pages 14-18, of the Specification of the instant application;

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ceramic walls all being entirely formed of printed layers forming channels through which a fluid can flow, said channels lying next to one another; and

the ceramic walls are identified by reference numeral 8 in Fig. 1 and described in lines 13 and 18 on page 13, of the Specification of the instant application; the printing of layers is described between column 5, line 44 and column 6, line 4 and the use of printing to form ceramic catalyst supports is described in column 6, lines 62 and 63, of U.S. Patent No. 5,714,103 which is incorporated by reference in the instant application; the channels lying next to one another are identified by reference numeral 5 in Fig. 1 and described between lines 8 and 13 on page 13, of the Specification of the instant application;

at least one of at least one measuring sensor and an electrically conductive mass integrated into one of said ceramic walls

the measuring sensor is identified by reference numeral 15 in Fig. 2 and described between lines 18 and 24 on page 14; the electrically conductive mass is identified

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by reference numeral 17 in Fig. 2 and described between line 25 on page 14 and line 2 on page 15; and the integration into a channel wall 11 in Fig. 2 is also described between line 25 on page 14 and line 2 on page 15, of the Specification of the instant application.

Grounds of Rejection to be Reviewed on Appeal

Whether or not claims 5-7, 14 and 17-20 are obvious over Bauer et al. (U.S. Patent No. 5,714, 103) in view of Maus et al. (U.S. Patent No. 5,474,746) under 35 U.S.C. § 103(a).

Argument:

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful. Claim 5 calls for, *inter alia*, a honeycomb body, comprising:

ceramic walls all being entirely formed of printed layers forming channels through which a fluid can flow, said channels lying next to one another; and

at least one of at least one measuring sensor and an electrically conductive mass integrated into one of said ceramic walls.

Accordingly, claim 5 calls for ceramic walls all being entirely formed of printed layers, and a honeycomb body having a measuring sensor or an electrically conductive mass integrated into one of its ceramic walls.

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At this point, Appellant would like to emphasize the following to the Board:

the recitation of a measuring sensor or an electrically conductive mass in a ceramic wall in claim 5 represents the presence of a material in the wall which is different from the material of the ceramic wall itself. Clearly, neither a measuring sensor nor an electrically conductive mass can be formed of the same ceramic material as the wall.

The Bauer reference discloses a process for the production of a porous shaped article from a composition which can undergo plastic deformation and solidification. In particular, Bauer relates to articles having a three-dimensional inter-connecting pore system such as, for example, implants, bones and filter bodies or static mixers for gases or liquids. In view of the materials that can be used for that process, Bauer explains that various materials are suitable for building up the porous shaped articles in layers.

However, there is no hint, in particular in view of honeycomb structures, that areas with separate different materials are to be generated in the Bauer process. Accordingly, Bauer only relates to structures being built up with the same homogeneous mixture of materials each time, whatever those materials may be.

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In the Response to Arguments on page 6 of the Final Office Action dated August 31, 2006, the Examiner has stated with regard to Bauer:

(2) With respect to the argument of Bauer et al. '103 fails to disclose the first and second masses disposed in printed layers and having different properties, Examiner respectfully disagrees. It is submitted that Bauer discloses the process of shaping the object by forming from printed layers (Col. 3, lines 5-15) and Bauer further discloses the process for production of shaped articles can be applied to virtually all materials which can undergo plastic deformation and then solidified in layers (Col. 4, lines 48-52). Therefore, applying different masses in printed layers does not limit the scope of Bauer's invention.

Analyzing the Examiner's comments, it can be seen that the Examiner acknowledges Appellant's argument that Bauer fails to disclose first and second masses with different properties. Then the Examiner states that Bauer's process can be applied to all material that can be plastically deformed and then solidified. However, it is not understood how the ability to use Bauer's process for different materials makes it obvious from Bauer to provide masses with different properties within the same article.

It must be understood that although Bauer can use different materials, he cannot use two different materials in the same article. If Bauer mixes materials, the same mixture is used everywhere. Claim 5 of the instant application calls for at least one measuring sensor or an electrically conductive mass

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integrated into one of the ceramic walls. Therefore, one or two elements of a material different than that of the walls are integrated into one of the ceramic walls. At most, Bauer could only provide two of the same elements as part of one wall and then two of the same elements as part of another wall - but never two different elements in the same wall.

Maus discloses a catalyst carrier body, wherein thin metal foils are used as upper and lower layers. Those foils form a void in which a heat conductor, a temperature sensor or a supply line can be laid.

The printing of ceramic layers in Bauer and the placement of a sensor in a void between two metal layers in Maus are two totally different manufacturing methods producing two totally different products - one being a printed ceramic catalytic converter with no sensors and the other being a metal catalytic converter with sensors embedded between metal layers.

In view of the completely different methods for the production of such honeycomb structures in Bauer and Maus, a person of skill in the art would have never combined these two documents. Additionally, the Maus reference clearly points in the direction of first manufacturing the walls of

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the honeycomb body (the foils) with voids or structures, before the sensor is positioned between two corresponding shaped foils.

Therefore, assuming *arguendo*, that one of ordinary skill in the art were to make a combination of Bauer and Maus, first the walls of the ceramic honeycomb structure would need to be manufactured according to a printing method, and afterwards the sensor would have to be positioned between two such printed layers before the honeycomb structure was finally formed. Since the printed layers have to be solidified before they can be positioned with respect to each other, the teaching of Maus clearly destroys the concept of the Bauer reference.

In the Response to Arguments on pages 5-6 of the Final Office Action of August 31, 2006, the Examiner has stated with regard to Maus:

(1) With respect to Applicant's argument of Maus '746 fails to teach a sensor or the electrically conductive mass is integrated into one of the ceramic walls, Examiner respectfully disagrees. It is submitted that Bauer et al. '103 discloses ceramic walls is formed with printed layers (Col. 3, lines 15-45 and Col. 4, lines 17-59) but fail to disclose a sensor or electrically conductive mass integrated into one of said ceramic walls. It is submitted that Maus '746 teaches not only the sensor and/or heat conductor 17 (Abstract and Col. 2, lines 17-49) extending between the honeycomb corrugated layers 21 and 22 (Fig. 2 and Col. 2, lines 17-42) to measure the wall temperature of the catalytic

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converter (Col. 3, lines 55-60) but also teaches the conductors is embedded in the ceramic walls (Col. 2, lines 25-30). The sensor embedded between the metallic walls in the Maus '746 is one of the preferred embodiments but is not limited to other materials including ceramic material because Maus '746 teaches that the sensor can be embedded in between layers, which can withstand high temperature and corrosion-proof material (Col. 2, lines 17-21) including ceramic material.

Analyzing the Examiner's comments, it can be seen that the Examiner argues that Maus teaches conductors embedded in ceramic walls in column 2, lines 25-30 thereof.

However, it is respectfully noted that the Examiner has misread the Maus reference in this regard.

The statement found in column 2, line 28 of Maus regarding conductors being embedded into a layer of electrically insulating ceramic powder, is applicable to walls of a honeycomb structure which are made from metal.

Therefore, Maus is only directed toward metallic honeycomb structures and since the ceramic powder is not built up with printed layers, there is no link to the Bauer reference.

It is noted that the corporate assignee of the Maus patent is also the assignee of the instant application and Appellant therefore is in the best position to know the disclosure of

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the Maus reference.

In the Advisory Action dated January 8, 2007, the Examiner has stated the following:

Applicant argued "... although Bauer can use different materials, he cannot use two different materials in the same article. If Bauer mixes materials, the same mixture is used everywhere". Examiner respectfully disagrees. It is submitted that Bauer discloses the printed layers are formed from both ceramic and non-ceramic materials (Col. 3, lines 15-30) and the process of shaping the article in Bauer does not preclude from using different materials for the same article. Bauer discloses the layers are formed from a "suitable preselected material" (Col. 4, lines 17-28) and thus, this "suitable preselected material" does not exclude two different materials in the same article. Note, each layer ("suitable preselected material" in each layer) can be made from the same or different material depend on design requirements. Therefore, Bauer's process can form layers of the same or different materials in the same article.

This argument set forth above by the Examiner represents the crux of the rejection and therefore will be analyzed in detail below.

The Examiner relies upon a statement in column 4, lines 18-19 of Bauer. However, the Examiner quotes only part of the statement. The Examiner's quotation is limited to the words "suitable preselected material." However, that quote is taken out of context since the Examiner has omitted the preceding word. The actual full phrase calls for "a suitable

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preselected material." Please note that the use of the singular article "a" means that only one preselected material can be used for the layers.

Nevertheless, the Examiner then states that the quoted phrase "does not exclude two different materials in the same article."

However, the exclusion of two different materials in the same article is exactly what the quoted phrase does.

The statement of Bauer that "a" or only one material can be used is an exclusion of the use of different materials in the layers. This definitely excludes the use of a measuring sensor or an electrically conductive mass in a ceramic wall as recited in claim 5 of the instant application, since such a sensor or mass is, of course, a material different from the material of the wall itself.

The leap in the Examiner's argument from "a suitable preselected material" mentioned by Bauer to "two different materials in the same article" mentioned by the Examiner, is not only based upon an incorrect reading of Bauer, but also represents a totally impermissible use of *ex post fact* wisdom which the Examiner has only acquired by reading the

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disclosure of the instant application.

Finally, a legally incorrect usage of a reference by the Examiner must be mentioned. The Examiner states in the Advisory Action that "the process of shaping the article in Bauer does not preclude from using different materials for the same article." However, a reference should be applied for what it teaches, not what it does not preclude. The Examiner's reasoning would allow any teaching not specifically precluded in a reference to be read into the reference, which is not how prior art should be applied. Such wholesale super-inventing by an Examiner results in inventions proposed by the Examiner, not by the prior art.

In conclusion, the following must be stated with regard to the rejection of claims 5-7, 14 and 17-20 over Bauer in view of Maus:

it is clear that Bauer and Maus do not show at least one measuring sensor and/or an electrically conductive mass integrated into one ceramic wall, as recited in claim 5 of the instant application;

it is clear that Bauer can use different materials, but can only use one material (or one mixture) in one element at a time; and

it is clear that Maus does not have ceramic walls all being entirely formed of printed layers, but instead uses ceramic powder in metallic walls.

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It is accordingly believed to be clear that neither the Bauer nor the Maus references, whether taken alone or in any combination, either show or suggest the features of claim 5. Claim 5 is, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because all of the dependent claims are ultimately dependent on claim 5.

The honorable Board is therefore respectfully urged to reverse the final rejection of the Primary Examiner.

If an extension of time is required for this submission, petition for extension is herewith made. Any fees due should be charged to Deposit Account No. 12-1099 of Lerner Greenberg Stemer LLP.

Respectfully submitted,



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Claims Appendix:

5. A honeycomb body, comprising:

ceramic walls all being entirely formed of printed layers forming channels through which a fluid can flow, said channels lying next to one another; and

at least one of at least one measuring sensor and an electrically conductive mass integrated into one of said ceramic walls.

6. The honeycomb body according to claim 5, wherein at least one of said measuring sensor and said electrically conductive mass is surrounded completely by ceramic.

7. The honeycomb body according to claim 5, wherein said measuring sensor is a temperature sensor.

14. The honeycomb body according to claim 5, wherein the honeycomb body is formed completely of ceramic.

17. The honeycomb body according to claim 5, wherein said layers are all flat.

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18. The honeycomb body according to claim 5, wherein the fluid can flow through said channels in a flow direction, and all of said layers are perpendicular to said flow direction.

19. The honeycomb body according to claim 5, wherein the fluid can flow through said channels in a flow direction, and all of said layers are parallel to said flow direction.

20. The honeycomb body according to claim 5, wherein said layers are a multiplicity of interconnected layers disposed one on top of the other.

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Evidence Appendix:

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or any other evidence has been entered by the Examiner and relied upon by Appellant in the appeal.

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Related Proceedings Appendix:

No prior or pending appeals, interferences or judicial proceedings are in existence which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal. Accordingly, no copies of decisions rendered by a court or the Board are available.